AN OPINION

PERTAINING TO EFFLUENT DISPOSAL

AT THE PLANT OF

THE WESTERN GAS COMPANY OF WASHINGTON

BREMERTON, WASHINGTON

by

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Seattle, Washington
June 5,1945

The Western Gas Company of Washington
Bremerton, Washington

Att: Mr. E. H. Cookingham

Dear Sir:

Enclosed is a report pertaining to the visit made to your plant at Bremerton, Washington on June 2.

This report deals with the disposal of the effluent of your plant.

Respectfully submitted,

S.R.Tymstra
Professor of
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The unprecidented growth of the city of Bremerton has forced the Western Gas Company of Washington to increase its daily output to the utmost. Such expansion, particularly with the present quality of fuels, always causes operating difficulties of various sorts.

The increased gas output has proportionally affected the circulation liquor which is a mixture of water, tar, oil and phenols. Its amount, its temperature, its velocity and its effluent, have all been increased.

This report deals principally with disposal of the effluent of the plant.

The Gas Company is contemplating a change in the liquor circulation as follows: The liquor coming down from both scrubbers will flow to one sump; from this it will be pumped to the gas holder, in which gravity action and slow motion will partially separate the tar and the water, and from which the water will overflow to a second pump, to be recirculated thru the system. The excess water, the effluent will be withdrawn from the cleanest section of this second sump, and will be run thru a sand filter, before being discharged into the Bay.

Recommendations

1. To increase the rate of cooling, the heavy wooden covering of the sumps should be removed. A railing should be supplied for safety.

2. The sand filter should be built in duplicate, so that one can be cleaned, while the other is in operation. They should be filled with dry sand.

3. The inlet should be subdivided, to distribute the effluent evenly over the width of the filter.

4. The following methods of discharge should reduce the phenol concentrations to an amount acceptable to the State Fishery Department.
   a. Subdivide the outlet into several smaller ones and discharge these into the Bay, a considerable distance apart.
   b. Dilute the discharge.
   c. Because the water of the Bay must be kept safe for marine life it should be tested for contaminations at a reasonable distance away from the discharge.

The suggested sand filter will probably prove entirely adequate. Nevertheless, measurers for possible additional equipment should be taken now.

Room should be left, just ahead of the sand filter, for a wide,

slow-velocity, vertically baffled, gravity type separator. The entrance

trough, and also the discharge trough, should be provided with an adjustable overflow edge, so that the flow will take place at a minnimum velocity along the entire width.

Appendix A

Experience has proved that excellent briquets can be made from coke breeze and a binder. This method, however, is uneconomical, for the abrasiveness of the coke wears out the machinery in a very short time.

Appendix B

The smoke nuisance occurring during the blow, can be somewhat alleviated by lengthening the blow-run a few seconds, and probably also by slight adjustment of the blast.